

into waterholes when they are only a few feet deep, and, keeping the cattle a short time in the water, they stir up the mud, and cause the fish to come to the surface, when the men can catch as many as they want. I have forced eels to come to the surface in the same way by making a hole muddy, and it can be seen that the places eels would prefer for their burrows would be where the water was salty, so that it would not carry mud in suspension, or else in sandy soil.

The Wurdieboluc Swamp had been dry for some time, but after the first rains thousands of young eels appeared in the swamp. In another swamp close by eels grow to a large size, and several over seven pounds in weight have been taken in the overflow.

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## DESCRIPTIONS AND NOTES OF AUSTRALIAN HESPERIDÆ, CHIEFLY VICTORIAN.

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(Communicated by G. Lyell.)

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IN offering this paper to the Field Naturalists' Club of Victoria I have to thank Mr. G. Lyell for the loan of the Victorian species under consideration.

From the following remarks two conclusions will, I think, be obvious. Firstly, that in the Hesperidæ the spots of the fore-wing are far from being numerically constant. Secondly, that no author should sink a species as a synonym without indicating his reason for so doing, or, at least, quoting the description of the species sunk. In further support of the first conclusion I may say that I have examined over one hundred male specimens of *Telesto donnyisa*, Hew., in which I found a range of from four to nine spots on the fore-wing, while in males of *Mesodina halyzia*, Hew., I have found specimens with one and sometimes even two sub-apical spots.

TELESTO MONTICOLÆ, Olliff. — *Hesperilla monticolæ*, Oll., Proc. Linn. Soc. N.S.W., 1889, p. 624; *T. monticolæ*, Meyr. and Lower, Trans. Roy. Soc. S.A., 1902, p. 63.

*Male*, 11-12 mm. Head, thorax, abdomen, and palpi above dark brown, below yellowish. Antennæ above very dark brown, below yellow. Fore-wing with costa straight; outer margin convex; apex acute; inner margin straight. Hind-wing rounded.

*Upper side*.—Fore-wing dark brown, basal area suffused with yellowish, a small orange spot at end of cell, three imperfectly divided sub-apical yellow spots, differing in size in all three specimens; discal stigma short, whitish surrounded by black,

from sub-median to end of cell, outwardly from its upper end a small elongated orange spot, in one specimen (and also in type) a smaller spot below this last. Cilia brownish-yellow spotted with dark brown. Hind-wing dark brown, basal area yellowish, an indistinct orange spot at end of cell in one specimen; in all specimens a broad orange suffusion beyond end of cell, below which are two oval orange spots, separated by second median nervule. Cilia as in fore-wing, longer and paler.

*Under side.*—Fore-wing with basal two-thirds of costa and whole of cell orange-yellow, apical area brownish-yellow, rest of wing almost black, spots of upper side reproduced, but much larger, sub-apical paler, rest darker. Cilia long, as on upper side. Hind-wing with a conspicuous broad longitudinal yellowish band through cell, interrupted near end of cell by a dark brown spot, in some specimens centred with yellow, and again by a brown bar near outer margin, below middle of this band two pale yellow oval spots, reproductions of those above, and above it a pale yellow patch; abdominal area pale yellow; anal area dark brown; rest of wing lighter brown. Cilia as on upper side.

*Female*, 12 mm. Shape much as in male, with apex rounder. Head, thorax, abdomen, palpi, and antennæ as in male.

*Upper side.*—Fore-wing dark brown, somewhat lighter than male; the spots of male all present, but larger, the discal series consisting of four yellow spots—first and second elongated, third smaller, lowest large, wedge-shaped, just above sub-median. Cilia long, yellowish, spotted with brown. Hind-wing dark brown, with a large cartridge-shaped yellow spot just beyond end of cell, below which are two similar but smaller darker yellow spots, divided by second median nervule. Cilia as in fore-wing.

*Under side.*—Fore-wing with basal two-thirds of costa and whole of cell rich yellow, spots of upper side reproduced, larger, and, with the exception of sub-apical series, darker; on outer margin below apex a pale yellow suffusion; rest of wing dark brown. Cilia as on upper side. Hind-wing as in male.

*Locality.*—Near Walhalla, Victoria (3,000 feet). Captured in February by collector (Mr. H. Jarvis) of Mr. C. French, F.L.S.

This species is compared by Olliff to *Hesperilla* (*Cyclopidus*) *cynone*, Hew., and by Meyrick and Lower to *Trapezites* (*Pamphila*) *gracilis*, Tepper, which are undoubtedly conspecific. Both former descriptions were taken from the co-types (two males) in the Australian Museum, from Moonbar (3,000 to 3,500 feet), near Mt. Kosciusko, N.S.W. These specimens are faded, and not in the best condition, which accounts for the spots being described as white. This species bears a general resemblance, on the upper side only, to *Telesto crypsargyra*, Meyr., from New South Wales, which is also a mountain butterfly.

This constitutes a new record for Victoria, and the female (now

for the first time described) in the collection of Mr. G. Lyell is the only known specimen.

*TELESTO MELANIA*, sp. nov.

*Male*, 15 to 17 mm. Head, thorax, abdomen, and palpi above blackish-brown, below whitish. Antennæ above black, club below yellowish-white. Fore-wing with costa straight, except just at base and apex; apex acute; outer margin slightly convex, inner margin straight. Hind-wing rounded.

*Upper side* brownish-black, without markings; discal stigma, from below sub-median nervure to lower end of cell, narrowly whitish, bordered with black. Cilia of fore-wing dark brown, of hind-wing white, spotted with dark brown.

*Under side*.—Fore-wing brown, lower portion of cell much darker, inner marginal area much lighter; usually without any spots, but sometimes a small whitish spot just beyond lower end of cell. Cilia brownish. Hind-wing light brown, often suffused with grey, usually with a curved discal series of seven whitish interneural spots (sometimes absent). Cilia whitish, spotted with brown.

*Female*, 17 mm. Head, thorax, abdomen, palpi, and antennæ as in male. Shape nearly as in male, with outer margin of fore-wing more convex.

*Upper side*.—Fore-wing dark brown, with a discal white spot just above second median, and in some specimens another below it. Cilia dark brown. Hind-wing uniformly dark brown. Cilia dark brown.

*Under side*.—Fore-wing as in male, with spots of upper side reproduced. Cilia brown. Hind-wing as in male, but the discal series very often wanting. Cilia brown.

*Locality*.—Cairns, Queensland. Captured by Mr. R. E. Turner, who has sent me specimens for description, the males being in perfect condition, the females slightly rubbed.

This species is allied to *T. bathrophora*, Meyr. and Lower, but is considerably larger, darker above and lighter below; the male has a longer and narrower discal stigma, and in the female the three sub-apical spots are absent. It has somewhat the appearance of an unmarked *Erynnis fuliginosa*, Misk., but the narrower fore-wing and the conspicuous pure white cilia of the hind-wing are marked features of the latter species.

*TRAPEZITES MAHETA*, Hewitson.—*Hesperia maheta*, Hew., Ann. Mag. Nat. Hist., 1877, p. 80, male; *Telesto praxedes*, Plötz, Stett. Ent. Zeit., 1884, p. 379, male; *Tel. phlaea*, Plötz, Stett. Ent. Zeit., 1884, p. 378, female; *Trap. maheta*, Meyr. and Lower, Trans. Roy. Soc. S.A., 1902, p. 89, male and female.

This variable species shows such constant differences in various localities that a description of the varieties appears necessary;

also a note on the synonymy, which has not been made clear by Meyrick and Lower.

Hewitson's description refers undoubtedly to a male ; he gives the under side as—"Pale rufous grey, except the lower half of the anterior wing and anal angle of posterior wing, which are dark brown. Posterior wing marked by four silvery white spots—two before the middle and two below these, one of which is minute—and by a less distinct white spot and several brown spots. Habitat, Queensland. Exp.,  $1\frac{3}{10}$  inch" (= 32 mm. double measurement.—G. A. W.)

Plötz describes the under side of his *Tel. praxedes* as—"Reddish-grey. Hind-wing with four white spots encircled with black, two close together in central cell and cell 1c, the other two in cells 1c and 2, towards the outer margin, a black dot in cells 6 and 7. 16 mm. Port Jackson."

These descriptions agree with Meyrick and Lower's male *T. maheta*, excepting only that they make seven silvery spots on the under side. This is a form very rarely met with, the four conspicuous spots being usually present, and the other much smaller ones being represented by dark dots, and only very rarely by silvery spots.

Meyrick and Lower sink *Tel. praxedes* under *Trap. symmokus*, Hübn., without assigning any reason for so doing. This cannot be correct, for *T. symmokus* could scarcely be described as "reddish-grey on the under side," and has more large spots than given by Plötz ; the size also is a telling character, being the same as given by Plötz for *ornata*, and less than that given by him for *picta*, *iachus*, *dirphia*, and *peronii* ; so Meyrick and Lower could only be correct on the very unlikely supposition that Plötz had in his possession only a remarkably undersized specimen of *symmokus*.

Again, Meyrick and Lower sink *Tel. phleæ* under *Trap. phigalia* (= *Trap. phillyra*), and here again they must be wrong. Plötz describes *phigalia* with references to Hewitson's description and Herrich-Schaeffer's figure on the same page with his description of *phleæ*. The sexes of *phigalia* are anything but markedly different, so I cannot believe that Plötz would give descriptions of both, on the one page, as separate species ; besides, his description of *phleæ* agrees very well indeed with the female of *maheta*. Plötz describes his specimen as a female, 17 mm. ; locality, Melbourne.

There is no doubt that Meyrick and Lower are quite correct in assigning the name *phigalia* to Miskin's species *phillyra*, as can be at once seen by an examination of Hewitson's description and Herrich-Schaeffer's figure.

It is not quite easy to decide which of the many forms is the typical *T. maheta*, but as Hewitson describes the under side as

"reddish-grey," I conclude it to be the form extending from Twofold Bay, N.S.W., to somewhat north of Brisbane, with a slight variation as we get farther north to Cairns, where a whitish suffusion extends over the under side in the male—the only sex of the Cairns variation I have yet seen.

I consider the following forms worthy of separate varietal names :—

TRAPEZITES MAHETA, var. PHIGALIOIDES, var. nov.

*Male*, 15 to 16 mm. Shape much as in typical *T. maheta*, but with outer margin distinctly more convex.

*Upper side* with the spots arranged as in *maheta*, except that the lowest sub-apical spot is only half the size of the other two, and is placed beyond them towards the apex ; the colour is less shining, and the cilia of hind-wing are grey, spotted with brown at termination of veins.

*Under side* with apical area of fore-wing and hind-wing greyish, sometimes faintly tinged with brown, the spots of fore-wing as on upper side, but larger, the spots of hind-wing as small brown rings, never centred with silver. Cilia grey, spotted with brown.

*Female*, 16 mm. Shape as in typical female, *T. maheta*.

*Upper side* as in *T. maheta*, except that the lowest sub-apical spot is nearest apex and the orange band of hind-wing is broader.

*Under side* as in *T. maheta*, except that the apex of fore-wing and whole of hind-wing are greyish. Cilia grey, freely spotted with brown.

*Locality*.—Gisborne, Toora, and Wandin South, Victoria.

This variety is described from types (male and female) in the collection of Mr. G. Lyell, from whom I have received duplicates. It is superficially very like the allied species *T. phigalia*, which, however, is of different shape, and always has the cell of fore-wing on under side orange. It can be easily recognized by the peculiar position of lowest sub-apical spot in fore-wing, and the absence of silver spots on the under side of hind-wing. Had Plötz mentioned in his description of *phleæ* the misplacement of the lowest sub-apical spot in fore-wing, and had he not described the colour as "reddish-grey," *phleæ* might have been considered as indicating this variety, which is figured in Anderson and Spry's "Victorian Butterflies," p. 119, under the name of *T. phigalia*, but that name rightly belongs to the species figured there as *T. phillyra*.

TRAPEZITES MAHETA, var. IACCHOIDES, var. nov.

*Male*, 17 mm. Shape as in male *T. maheta*, but apex of fore-wing very acute, and outer margin quite straight.

*Upper side* as in typical male *T. maheta*, with the band of hind-wing broader and deeper orange. Cilia greyish.



*Under side* with the reddish-grey replaced by salmon colour, and the silver spots of hind-wing (usually six in number) of moderate size, that of apex being equal in size to that of anal angle. Cilia yellowish, spotted with brown.

*Locality*—Como and Blue Mountains, N.S.W. (F. Brown). Type in author's collection.

The colour of the under side readily distinguishes this variety. I was at first inclined rather to think it a hybrid of *iacohus* and *maheta*, but now that several males have been taken in two localities it is best regarded as a marked variety.

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THE BLACK "EMEU."—Mr. Graham Renshaw, M.B., who has on several occasions contributed articles to the *Zoologist* on rare animals, &c., which are known only as museum specimens, devotes the latest of his essays, in the March (1903) number, to *Dromæus ater*, the extinct emu of Kangaroo Island. Mr. Renshaw, after diligent search, can record only six specimens, but the whereabouts of three of these is at present unknown. He figures the only stuffed specimen known, that in the Jardin des Plantes Museum, Paris. It will be remembered that an account of the finding in the Florence (Italy) Museum of a skeleton of this bird appeared in the *Victorian Naturalist* (vol. xvii., p. 114) some time ago, and gave rise to the query (*Naturalist*, vol. xvii., p. 128) as to whether any remains of the extinct Tasmanian Emu survive in museums, so far with no response. Mr. Renshaw regards *Dromæus ater* as one of the rarest of the rare birds, but expresses no opinion as to whether it and the Tasmanian are distinct or identical species. This is a point which seems to require clearing up, for, if the same, it is rather singular that the same bird should exist on two islands at least 500 miles apart with no trace of the species, or of a connecting link, on the mainland of Australia, from which the islands are separated, in the case of Kangaroo Island by a strait of only 10 miles across, and Tasmania of 135 miles. Dr. Latham, the eminent ornithologist, in his "General History of Birds," published in 1822, mentions having seen a pair of "Van Dieman's Cassowary," one of which he figures under the specific name of *D. ater*, but as these are now among the missing specimens, it seems impossible to be certain as to the identity of the Emus of the two islands.

THE DAISY.—Mr. R. L. Praeger writes in *Knowledge* for July on wild flowers of the most familiar and best-loved kinds, among them the Daisy, of which he says:—"The yellow button-like *disk* is composed of a myriad of small perfect flowers, with yellow five-cleft tubular corolla, and ring of fused stamens surrounding the pistil. Of calyx we find hardly a trace; the close packing of the flowers leaves no room for it, and renders it unnecessary as a protective structure. In the Compositæ the calyx is